



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,729	03/28/2006	Bernhard Gleich	PHUS030392US	2263

38107 7590 03/28/2007
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
595 MINER ROAD
CLEVELAND, OH 44143

EXAMINER

VARGAS, DIXOMARA

ART UNIT	PAPER NUMBER
----------	--------------

2859

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/573,729

Applicant(s)

GLEICH ET AL.

Examiner

Dixomara Vargas

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/28/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to a transmission cable, for use in a MR apparatus, classified in class 324, subclass 318.
 - II. Claim 14, drawn to an MR compatible catheter apparatus, classified in class 600, subclass 435.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because group I does not require the use of a catheter with a transmission cable disposed between the catheter and the preamplifier as required by group II. Therefore, group I can be use without invasive means to the body.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or

Art Unit: 2859

divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Thomas M. Lundin on 03/20/07 a provisional election was made with traverse to prosecute the invention of group I, claims 1-13. Affirmation of this election must be made by applicant in replying to this Office action. Claim 14 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 4, 6-7, 9 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Keilman et al. (US 6,231,516 B1).

With respect to claim 1, Keilman discloses a transmission cable, for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): a plurality of cable segments (RF coil segments #223A); and a plurality of electroacoustic couplers for providing electrical connection between segments (ultrasonic and electrical transducer sensor #220).

9. With respect to claims 2 and 7, Keilman discloses a first mixer disposed at a first end of the cable for shifting a signal frequency associated with the electroacoustic couplers (Column 11, lines 5-34).

10. With respect to claims 4 and 9, Keilman discloses each cable segment comprises a first conductor and a second conductor and each of the first and second conductors is connected to at least one electroacoustic coupler (Figure 19D, RF conductors #223A are connected through transducers #220).

11. With respect to claim 6, Keilman discloses an MR apparatus comprising: a first magnet system for generating a main magnetic field in an examination region (Column 38, lines 29-32); an RF coil disposed in the examination region for transmitting and/or receiving RF signals to and/or from the examination region (RF coil #223A); and a plurality of transmission cables for

Art Unit: 2859

carrying signals with the MR system, at least one of the transmission cables comprising a plurality of cable segments (RF coil segments #223A) and a plurality of electroacoustic couplers for coupling adjacent cable segments (ultrasonic and electrical transducer sensor #220).

12. With respect to claim 11, Keilman discloses a transmission cable for use in a magnetic resonance apparatus, the transmission cable comprising (Figures 19A-19D): a plurality of cable segments (RF coil segments #223A); and a plurality of couplers each of which transforms a first signal carried by a first cable segment into an acoustic signal and from the acoustic signal into a second signal carried by a second cable segment (ultrasonic and electrical transducer sensor #220).

13. With respect to claim 12, Keilman discloses each coupler has high impedance (Columns 34-35, lines 64-67 and 1-10 respectively) for a common mode wave on the cable (Columns 27-28, lines 38-67 and 1-5 respectively).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2859

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 3, 8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keilman et al. (US 6,231,516 B1).

With respect to claims 3, 8 and 13, Keilman discloses a mixer disposed at a second end of the cable for shifting a signal frequency associated with the electroacoustic couplers (Column 11, lines 35-46; Figure 4, elements #50). Also Keilman discloses the claimed invention as stated above except for a second mixer since Keilman simplifies the structure by using one mixer with multiple connections, one for each transducer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have more than one mixer, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

17. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keilman et al. (US 6,231,516 B1) in view of Wilk (US 6,319,201 B1).

With respect to claims 5 and 10, Keilman discloses the claimed invention as stated above in paragraph 8 except for specifying the transducer structure (considered to be the electroacoustic means) wherein each electroacoustic coupler comprises: a substrate; a first set of conductive fingers disposed on the substrate; and a second set of conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the second set of conductive fingers. However, Wilk discloses the transducer structure (considered to be the electroacoustic means) wherein each electroacoustic coupler comprises: a substrate; a first

Art Unit: 2859

set of conductive fingers disposed on the substrate; and a second set of conductive fingers disposed on the substrate whereby an acoustic signal is passed from the first set of conductive fingers to the second set of conductive fingers (Columns 3-4, lines 59-65 and 1-18 respectively; Figure 20, electroacoustic means #352 in substrate #350). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the transducer's structure as shown by Wilk with Keilman's transmission cable for the purpose of obtaining a compact, lightweight and portable configuration in an imaging device as taught by Wilk (Column 3, lines 59-65).

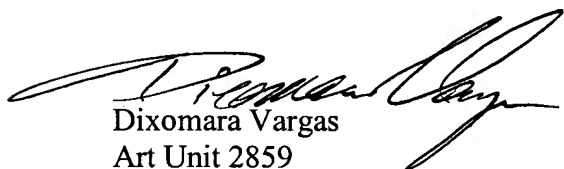
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2859

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dixomara Vargas
Art Unit 2859



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800